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Title: Purified and Isolated MAT II β Subunit Nucleic Acids and Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

MAT II ß Protein Subunit Sequence

cDNA

```
                  -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC     -1

(1)    M  V  G  R  E  K  E  L  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  L  V    (33)
+1     ATGGTGGGGCGGGAGAAAGAACTGTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTCTGGTT  99

(34)   T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K    (66)
100    ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA  198

(67)   F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P    (99)
199    TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA  297

(100)  D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I    (132)
298    GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC  396

(133)  Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D    (165)
397    TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT  495

(166)  G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  L  Y  G  E  V  E  K  L  E  E  S  A  V  T    (198)
496    GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTCTGTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT  594

(199)  V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C    (231)
595    GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC  693

(232)  R  Q  L  A  E  K  R  M  L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T  K  Y  E  M  A  C  A    (264)
694    CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA  792

(265)  I  A  D  A  F  N  L  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C    (297)
793    ATTGCAGATGCCTTCAACCTCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC  891

(298)  S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q    (330)
892    TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA  990

(331)  T  V  F  H Ter                                                                                          (334)
991    ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT  1089
1090   GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
1189   CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
1288   AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
1387   AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
1486   ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
1585   TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
1684   GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
1783   GGCATGT(A)18+
```

polyadenylation signal

FIG. 1

MAT II ß Protein Subunit Sequence

cDNA

```
                                                -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC    -1

(1)   M V G R E K E I S I H F V P G S C R L V E E E V N I P N R R V L V   (33)
+1    ATGGTGGGGCGGGAGAAAGAAATCTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTCTGGTT   99

(34)  T G A T G L L G R A V H K E F Q Q N N W H A V G C G F R R A R P K   (66)
100   ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA   198

(67)  F E Q V N L L D S N A V H H I I H D F Q P H V I V H C A A E R R P   (99)
199   TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA   297

(100) D V V E N Q P D A A S Q L N V D A S G N L A K E A A A V G A F L I   (132)
298   GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC   396

(133) Y I S S D Y V F D G T N P P Y R E E D I P A P L N L Y G K T K L D   (165)
397   TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT   495

(166) G E K A V L E N N L G A A V L R I P I L Y G E V E K L E E S A V T   (198)
496   GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTCTGTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT   594

(199) V M F D K V Q F S N K S A N M D H W Q Q R F P T H V K D V A T V C   (231)
595   GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC   693

(232) R Q L A E K R M L D P S I K G T F H W S G N E Q M T K Y E M A C A   (264)
694   CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA   792

(265) I A D A F N L P S S H L R P I T D S P V L G A Q R P R N A Q L D C   (297)
793   ATTGCAGATGCCTTCAACCTCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC   891

(298) S K L E T L G I G Q R T P F R I G I K E S L W P F L I D K R W R Q   (330)
892   TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA   990

(331) T V F H Ter                                                        (334)
991   ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT   1089
1090  GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
1189  CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
1288  AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
1387  AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
1486  ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
1585  TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
1684  GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
1783  GGCATGT(A) 18+
```

FIG. 2

polyadenylation signal

Title: Purified and Isolated MAT II β Subunit Nucleic Acids and Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

MAT II ß Protein Subunit Sequence

cDNA

```
                                                    -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC    -1

(1)    M  V  G  R  E  K  E  L  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  I  V   (33)
+1     ATGGTGGGGCGGGAGAAAGAACTGTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTATCGTT    99

(34)   T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K   (66)
100    ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA   198

(67)   F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P   (99)
199    TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA   297

(100)  D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I   (132)
298    GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC   396

(133)  Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D   (165)
397    TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT   495

(166)  G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  L  Y  G  E  V  E  K  L  E  E  S  A  V  T   (198)
496    GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTCTGTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT   594

(199)  V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C   (231)
595    GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC   693

(232)  R  Q  L  A  E  K  R  M  L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T  K  Y  E  M  A  C  A   (264)
694    CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA   792

(265)  I  A  D  A  F  N  L  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C   (297)
793    ATTGCAGATGCCTTCAACCTCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC   891

(298)  S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q   (330)
892    TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA   990

(331)  T  V  F  H  Ter                                                                                      (334)
991    ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT  1089
1090   GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
1189   CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
1288   AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
1387   AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
1486   ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
1585   TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
1684   GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
1783   GGCATGT(A) 18+
```

polyadenylation signal

FIG. 3

Title: Purified and Isolated MAT II β Subunit Nucleic Acids and Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

Title: Purified and Isolated MAT II β Subunit Nucleic Acids and Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

MAT II ß Protein Subunit Sequence

cDNA

```
                                       -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC  -1

 (1)  M  V  G  R  E  K  E  L  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  L  V   (33)
 +1   ATGGTGGGGCGGGAGAAAGAACTGTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTCTGGTT  99

 (34) T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K   (66)
 100  ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA  198

 (67) F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P   (99)
 199  TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA  297

(100) D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I   (132)
 298  GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC  396

(133) Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D   (165)
 397  TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT  495

(166) G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  I  Y  G  E  V  E  K  L  E  E  S  A  V  T   (198)
 496  GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTATCTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT  594

(199) V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C   (231)
 595  GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC  693

(232) R  Q  L  A  E  K  R  M  L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T  K  Y  E  M  A  C  A   (264)
 694  CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA  792

(265) I  A  D  A  F  N  L  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C   (297)
 793  ATTGCAGATGCCTTCAACCTCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC  891

(298) S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q   (330)
 892  TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA  990

(331) T  V  F  H Ter                                                                                          (334)
 991  ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT  1089
1090  GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
1189  CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
1288  AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
1387  AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
1486  ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
1585  TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
1684  GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
1783  GGCATGT(A) 18+
```

polyadenylation signal

FIG. 4

MAT II ß Protein Subunit Sequence

cDNA

```
                     -60 CGTCGATCCTGGGTTGGAGGAGGTGGCGGCCGCTGAGGCTGCGGCGTGAAGACGGCGGGC   -1

 (1)   M  V  G  R  E  K  E  L  S  I  H  F  V  P  G  S  C  R  L  V  E  E  E  V  N  I  P  N  R  R  V  L  V   (33)
 +1   ATGGTGGGGCGGGAGAAAGAACTGTCTATACACTTTGTTCCCGGGAGCTGTCGGCTGGTGGAGGAGGAAGTTAACATCCCTAATAGGAGGGTTCTGGTT   99

 (34)  T  G  A  T  G  L  L  G  R  A  V  H  K  E  F  Q  Q  N  N  W  H  A  V  G  C  G  F  R  R  A  R  P  K   (66)
 100  ACTGGTGCCACTGGGCTTCTTGGCAGAGCTGTACACAAAGAATTTCAGCAGAATAATTGGCATGCAGTTGGCTGTGGTTTCAGAAGAGCAAGACCAAAA  198

 (67)  F  E  Q  V  N  L  L  D  S  N  A  V  H  H  I  I  H  D  F  Q  P  H  V  I  V  H  C  A  A  E  R  R  P   (99)
 199  TTTGAACAGGTTAATCTGTTGGATTCTAATGCAGTTCATCACATCATTCATGATTTTCAGCCCCATGTTATAGTACATTGTGCAGCAGAGAGAAGACCA  297

(100)  D  V  V  E  N  Q  P  D  A  A  S  Q  L  N  V  D  A  S  G  N  L  A  K  E  A  A  A  V  G  A  F  L  I  (132)
 298  GATGTTGTAGAAAATCAGCCAGATGCTGCCTCTCAACTTAATGTGGATGCTTCTGGGAATTTAGCAAAGGAAGCAGCTGCTGTTGGAGCATTTCTCATC  396

(133)  Y  I  S  S  D  Y  V  F  D  G  T  N  P  P  Y  R  E  E  D  I  P  A  P  L  N  L  Y  G  K  T  K  L  D  (165)
 397  TACATTAGCTCAGATTATGTATTTGATGGAACAAATCCACCTTACAGAGAGGAAGACATACCAGCTCCCCTAAATTTGTATGGCAAAACAAAATTAGAT  495

(166)  G  E  K  A  V  L  E  N  N  L  G  A  A  V  L  R  I  P  I  L  Y  G  E  V  E  K  L  E  E  S  A  V  T  (198)
 496  GGAGAAAAGGCTGTCCTGGAGAACAATCTAGGAGCTGCTGTTTTGAGGATTCCTATTCTGTATGGGGAAGTTGAAAAGCTCGAAGAAAGTGCTGTGACT  594

(199)  V  M  F  D  K  V  Q  F  S  N  K  S  A  N  M  D  H  W  Q  Q  R  F  P  T  H  V  K  D  V  A  T  V  C  (231)
 595  GTTATGTTTGATAAAGTGCAGTTCAGCAACAAGTCAGCAAACATGGATCACTGGCAGCAGAGGTTCCCCACACATGTCAAAGATGTGGCCACTGTGTGC  693

(232)  R  Q  L  A  E  K  R  M  L  D  P  S  I  K  G  T  F  H  W  S  G  N  E  Q  M  T  K  Y  E  M  A  C  A  (264)
 694  CGGCAGCTAGCAGAGAAGAGAATGCTGGATCCATCAATTAAGGGAACCTTTCACTGGTCTGGCAATGAACAGATGACTAAGTATGAAATGGCATGTGCA  792

(265)  I  A  D  A  F  N  I  P  S  S  H  L  R  P  I  T  D  S  P  V  L  G  A  Q  R  P  R  N  A  Q  L  D  C  (297)
 793  ATTGCAGATGCCTTCAACATCCCCAGCAGTCACTTAAGACCTATTACTGACAGCCCTGTCCTAGGAGCACAACGTCCGAGAAATGCTCAGCTTGACTGC  891

(298)  S  K  L  E  T  L  G  I  G  Q  R  T  P  F  R  I  G  I  K  E  S  L  W  P  F  L  I  D  K  R  W  R  Q  (330)
 892  TCCAAATTGGAGACCTTGGGCATTGGCCAACGAACACCATTTCGAATTGGAATCAAAGAATCACTTTGGCCTTTCCTCATTGACAAGAGATGGAGACAA  990

(331)  T  V  F  H Ter                                                                                       (334)
 991  ACGGTCTTTCATTAGTCTATTTGTGTTGGGTTCTTTTTTTTTTAAATGAAAAGTATAGTATGTGGCACTTTTTAAAGAACAAAGGAAATAGTTTTGTAT  1089
1090  GAGTACTTTAATTGTGACTCTTAGGATCTTTCAGGTAAATGATGCTCTTGCACTAGTGAAATTGTCTAAAGAAACTAAAGGGCAGTCATGCCCTGTTTG
1189  CAGTAATTTTTCTTTTTATCATTTTGTTTGTCCTGGCTAAACTTGGAGTTTGAGTATAGTAAATTATGATCCTTAAATATTTGAGAGTCAGGATGAAGC
1288  AGACCTGCTGTAGACTTTTCAGATGAAATTGTTCATTCTCGTAACCTCCATATTTTCAGGATTTTTGAAGCTGTTGACCTTTTCATGTTGATTATTTTA
1387  AATTGTGTGAAATAGTATAAAAATCATTGGTGTACATTATTTGCTTTGCCTGAGCTCAGATCAAAATGTTTGAAGAAAGGAACTTTATTTTTGCAAGTT
1486  ACGTACAGTTTTTATGCTTGAGATATTTCAACATGTTATGTATATTGGAACTTCTACAGCTTGATGCCTCCTGCTTTTATAGCAGTTTATGGGGAGCAC
1585  TTGAAAGAGCGTGTGTACATGTATTTTTTTTCTAGGCAAACATTGAATGCAAACGTGTATTTTTTTAATATAAATATATAACTGTCCTTTTCATCCCAT
1684  GTTGCCGCTAAGTGATATTTCATATGTGTGGTTATACTCATAATAATGGGCCTTGTAAGCCTTTTCACCATTCATGAATAATAATAAATATGTACTGCT
1783  GGCATGT(A) 18+
```

FIG. 5

polyadenylation signal

```
tttgcaaaag aaactccagg attcttgaca gaaagttgtt gggttttggt tttggttttg 60
ttaagtagtt agttctacca atagtttgca aatagaccca ggcttgactg gcaattaacc 120
atgaaacttc tcattgggta ttttcgagac tactacgggg aatcagctac cagctttact 180
gccatgtgga gaactgcacg agattccggg attggaatca aaatgctaat ttaaaaggtc 240
aagtgaagct gctcctcacg ttttggcgtg cctgcgctct ctgcaggcag aagcgaacaa 300
agacccagca agagaaggca gaggctaaga cccatcccgt atctgctctc ctgaaataat 360
tctggagtca tgcctgaaat gccagaggac atggagcagg taagaactag caattcaaga 420
aatgaagcat tctagagtaa gagatgcttt aaaagcattc cagtgaacgc ctgctaaaac 480
cagaattgtt gtgtaaagaa aatagaaacg ggtgtcattc atttccttaa aacataacct 540
cgggacatgg aagaataagc caactttagt tactgacccg gagaaccagg ttatgaaggg 600
ctcagctaag tctcactagc tgacaataca gaattgcact ttcatttacc attttaaatg 660
caattatgta tataaagttt ctacataaat aaggatttta tctgtagtgt gttcccttcc 720
agatgttctt tgtctttgta tgaattgaat ctgctaacat aacttttagt ttcaggctgc 780
tctctttaaa tgtatagact tagccaccac acgaagttgt atattgtcta tgttaagaat 840
ggcgtttgat tcgcatagac cctaccatca ttaaagaaaa tgattaaaaa ccatatccaa 900
acatatgccc ctagaactgt acccaacttt tacggggaaa gtatcaagtc agattttcaa 960
aagcagccaa gttaaattct ttctgttcct caagactagg ctgctctgag aatcagaatg 1020
ctaattgcat atgcttgccc ttaaacctgc ttcacgttga agaatgaaga attaattttc 1080
ttttctccca tagaaaggta agattacatc acgtgttgcg actagaaact ttaaaccgaa 1140
ttcccagtta agagaaaaag tagtaagatg atcttggctg ctccccggc cctcttcccg 1200
ccctcttctt tgttgtcccc tgattatgct tgtttagcgc tggggcagtc ctcaaggatt 1260
ccctaaataa agccaaactg atgaacagta atagcctgtg tttaaaaaaa aaaaaatcgg 1320
aacataagaa acctcaggct gtcttcgatt actgttctag agaaacttta tgtttacacg 1380
aataaggaaa tgagtttttg ttgggggttg aggaggaagg aaagtcatgg tgttctgacg 1440
tggaaaactt ctttaaaagg ctgcttagtc tttagtttga aaataaacca aaaaggttta 1500
ggagtcgggg aaaggcccta ggaaaatcca gacagtggtc acgtttgtgg acgacgttta 1560
gagcttgcta tcctgggcac acaagaaccc ttggactgtt cggtgcaaag ttggcaaatc 1620
ctacacggcc tgtgccaggg tttactttct gcatcaattt cacaggcgtc cagcctggct 1680
gaggactttt tgcggttttt aactggaagg gaaataagtc ggcatcagca cttagggctg 1740
cttaactttt aaaaggtggt agaacgccca gccttacacg ctgctgctta aattctcggt 1800
gctcaccaag gctgggctcg tgtggcccaa tcctgcaatc cccgaggcgg tgtttcttaa 1860
agagtgggct tgattctggt taaacccatt aagaagtcgg accccgggct cgtttcttgt 1920
tctgtaatta tgggtaaagt ccaaggatct gcgttttgaa gaggtaccta agtagttcat 1980
cttccttccc cctacaactt tttatttta attagttaaa aatagtttta catttttgat 2040
atctcacaca caggtttttt ctttttttaa gcatcccagg aagacaaatg gctcagacgc 2100
caacccttt attttattc cttgtctttt tctaaatctt tcaaaacccc cacctagagc 2160
tctagagatg tgtccattat gctctaccca cctccgcccc cgcccccatg actttaaaat 2220
gctttttatt ccactttta tattgctcag tcgatcctca tgcactgcgc agtctgcaaa 2280
cttgaaactc aaggcgatcc acttcaatct tttcccgagt caagaaaaaa aggaaaaaaa 2340
gtagaataaa aagcactcaa ataaaatctc cgaaacaaaa cctgaattca ctgcctaagg 2400
tcagggcctt tcttttgtgt gtcgctttaa gcatcggcgc gtgggctggg ggcagaccgc 2460
gcgtacccgc cctctttctg gggcgtcggc ggagcgtggc caatcaacgg gcgcggctat 2520
ggcagcggaa gccggaagcg gcgagcgggg tcgttctggg cctaggggag gcgggccgag 2580
ggcgtctgag ctgaggcccg cgtcgatcct gggttggagg aggtggcggc cgctgaggct 2640
gcggcgtgaa gacggcgggc                                           2660
```

FIG. 6

Title: Purified and Isolated MAT II β Subunit Nucleic Acids and Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

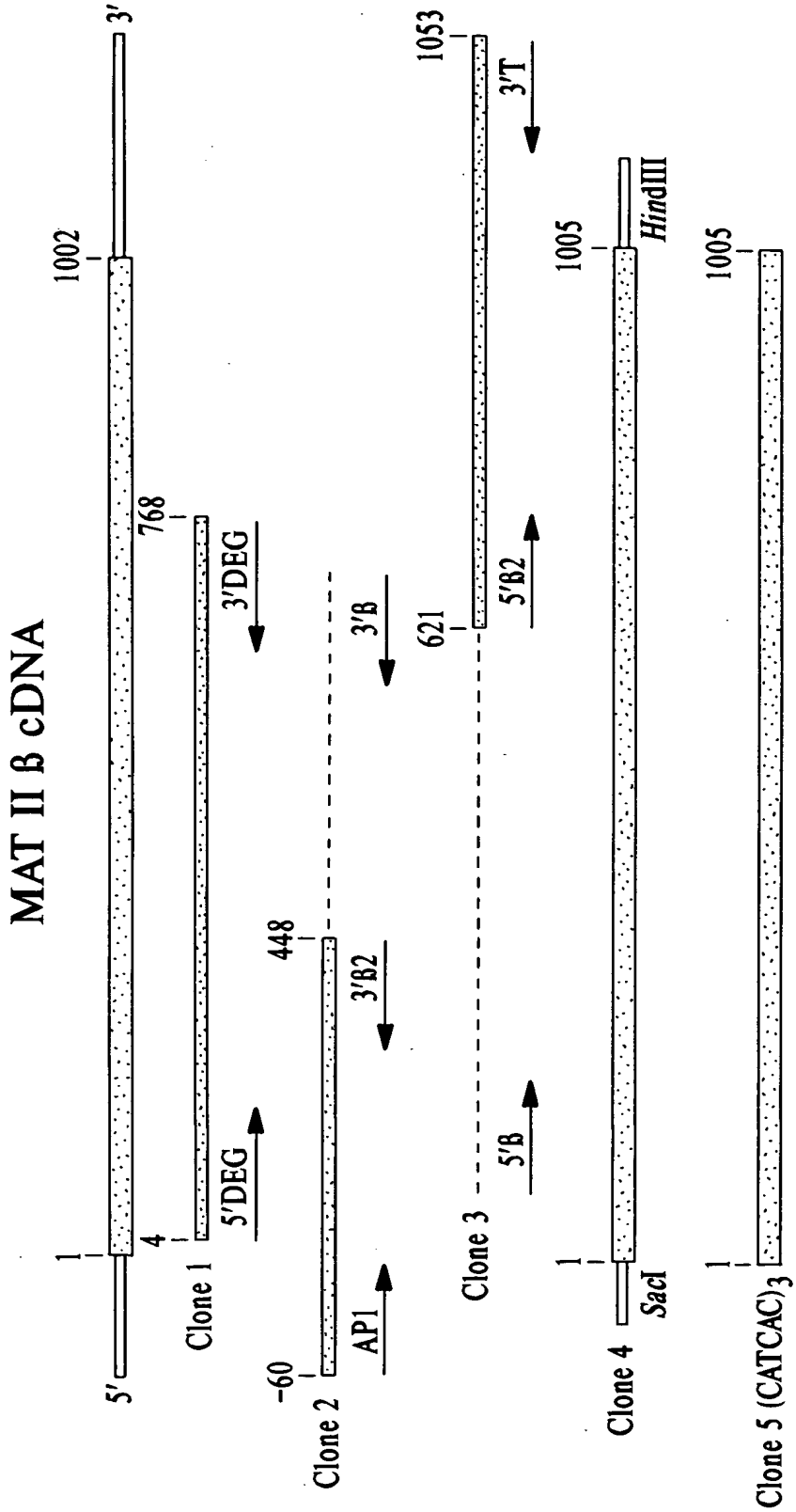


FIG. 7

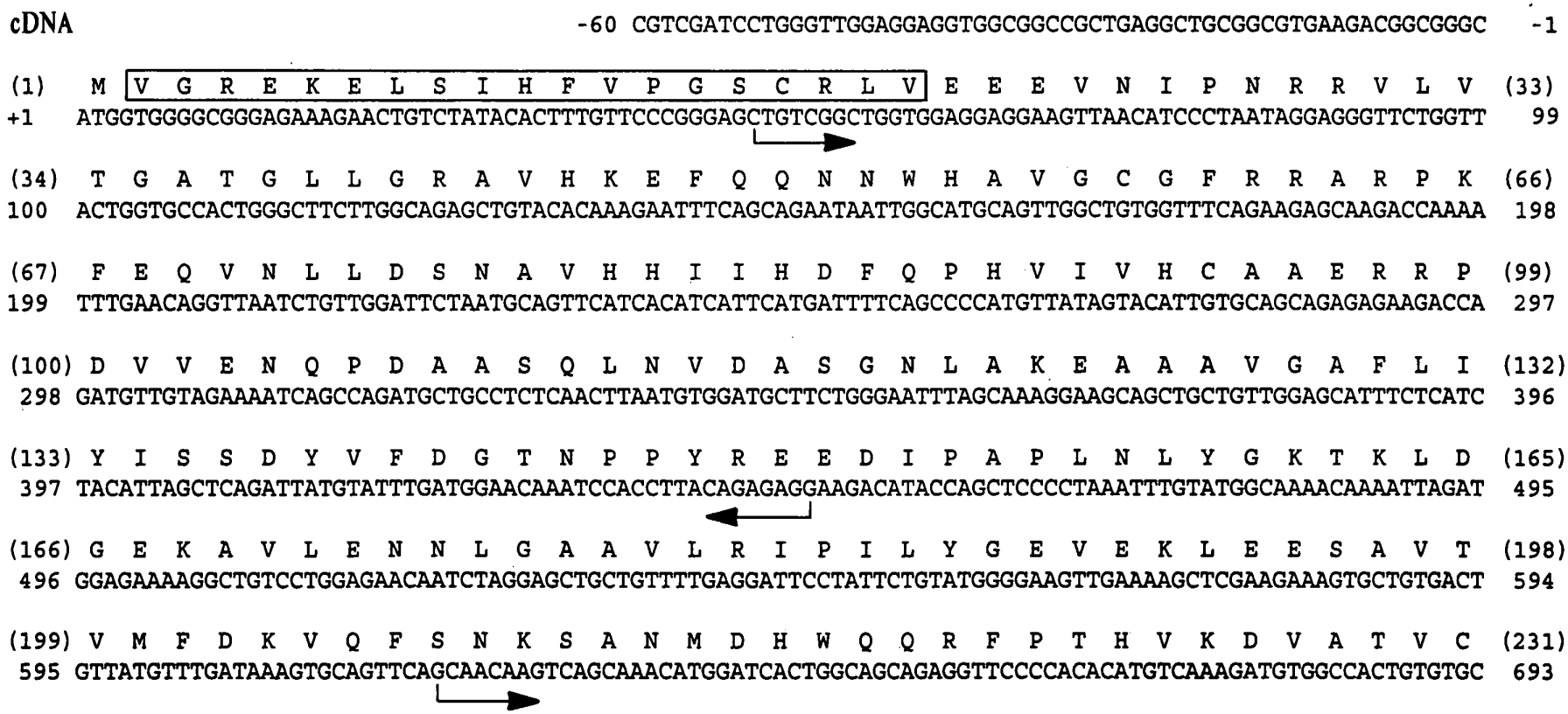


FIG. 8A

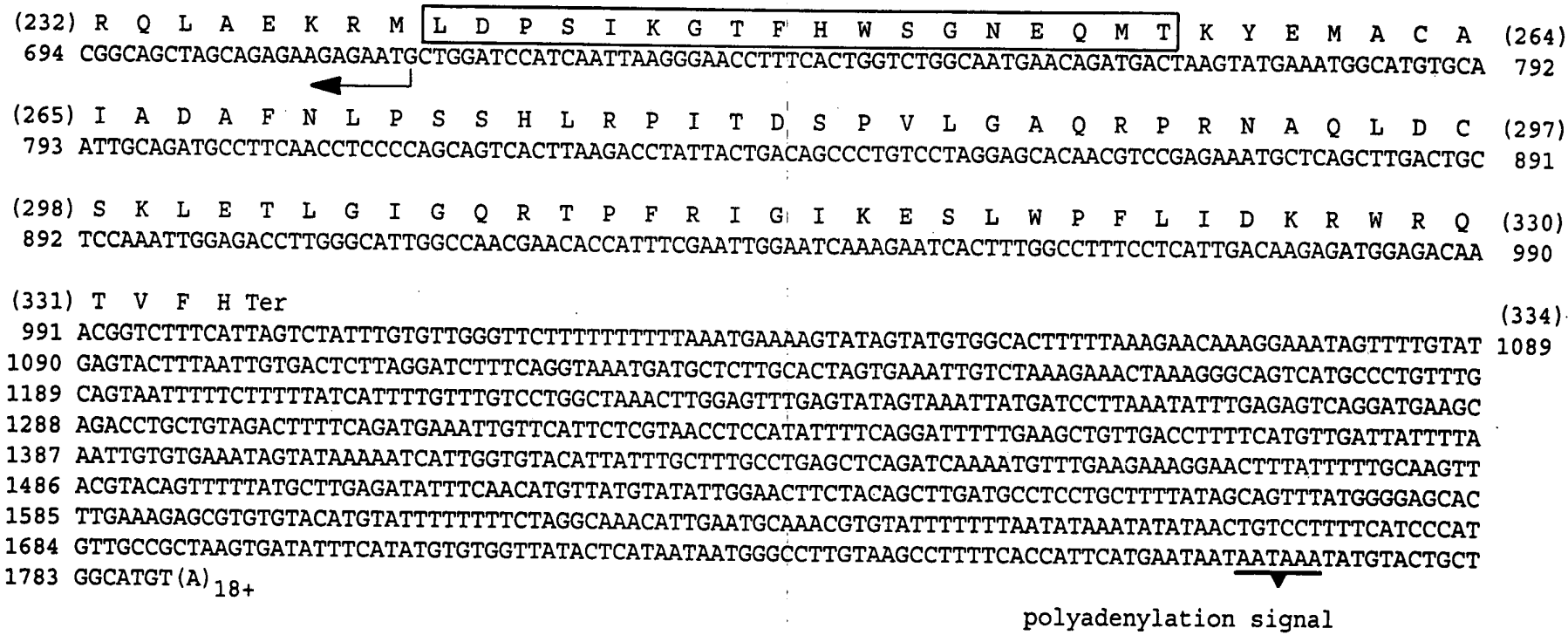


FIG. 8B

Title: Purified and Isolated MAT II β Subunit Nucleic Acids and Polypeptides...
Inventor: Kotb et al.
Attorney Docket No.: 1306/9/2/2

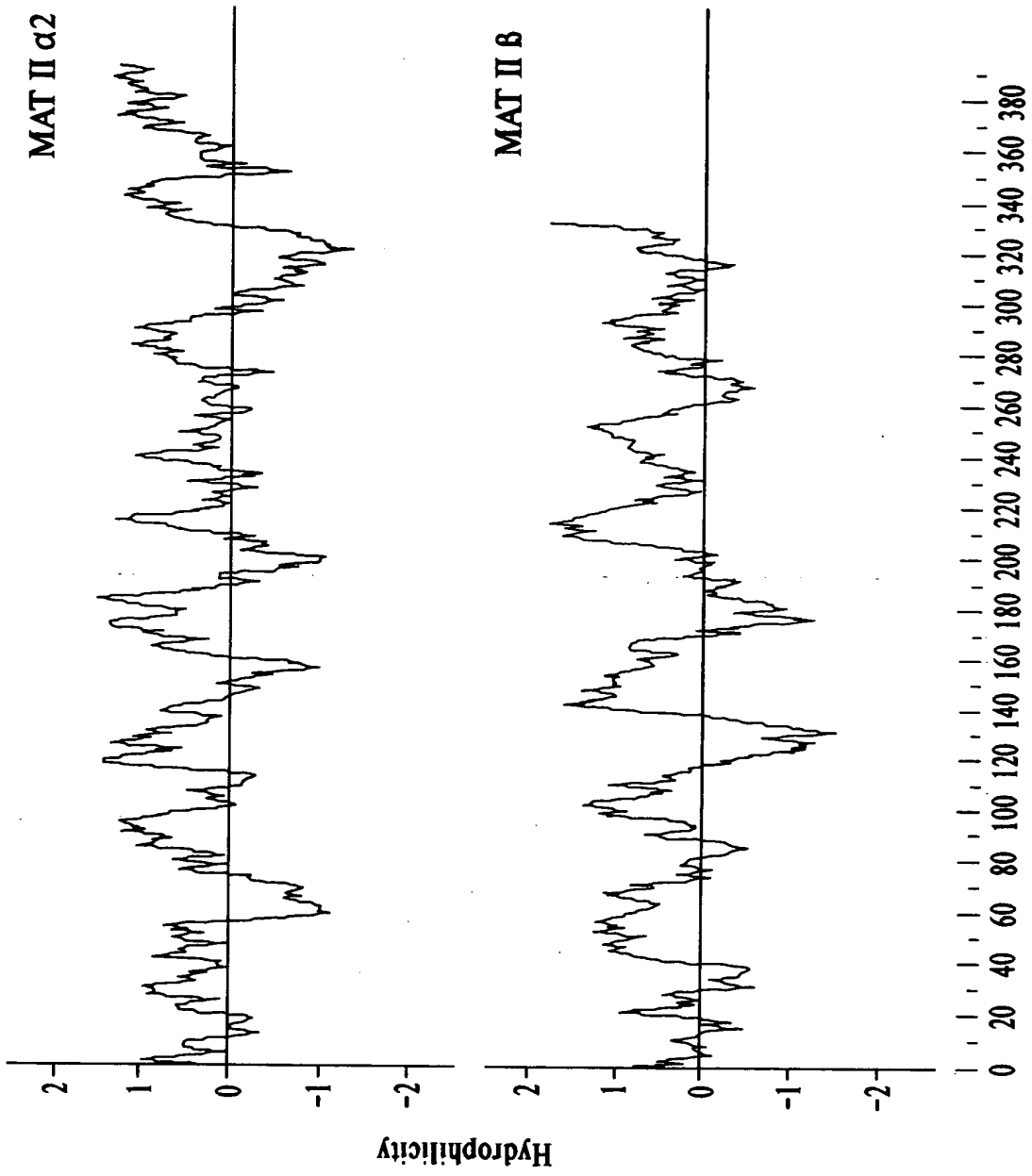

MAT II α2
MAT II β
Hydrophilicity
2
1
0
-1
-2
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380

FIG. 9

FIG. 10A

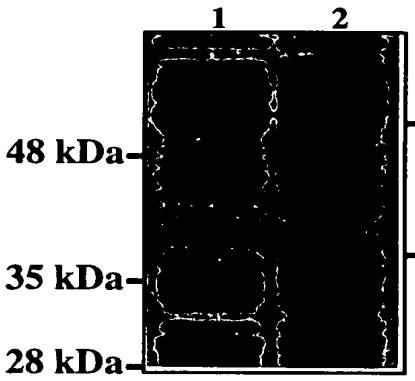


FIG. 10B

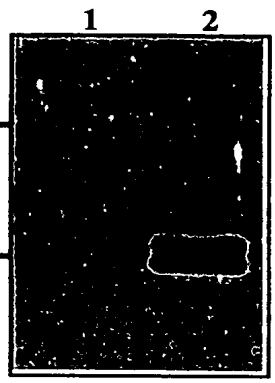


FIG. 10C

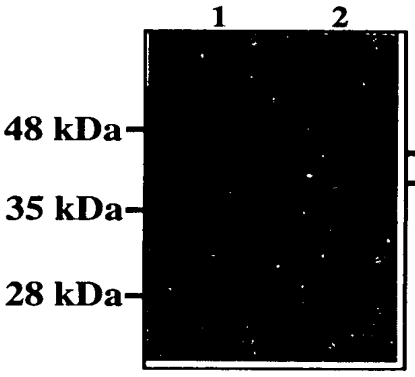


FIG. 10D

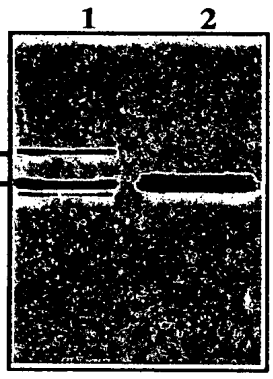


FIG. 11A

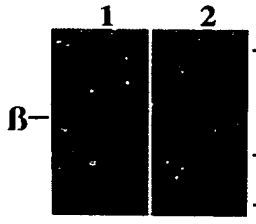
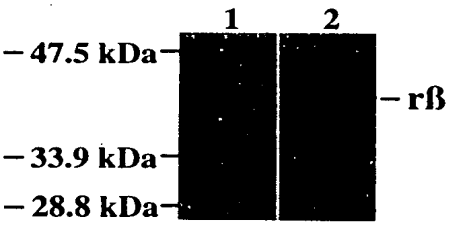


FIG. 11B



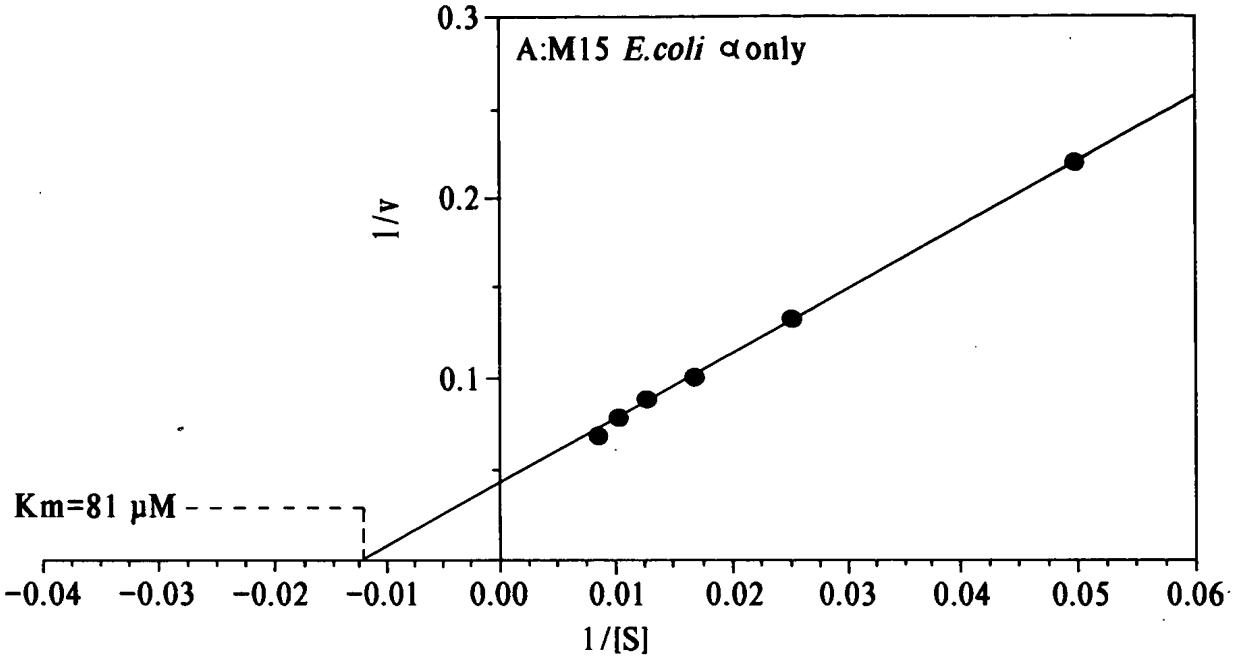


FIG. 12A

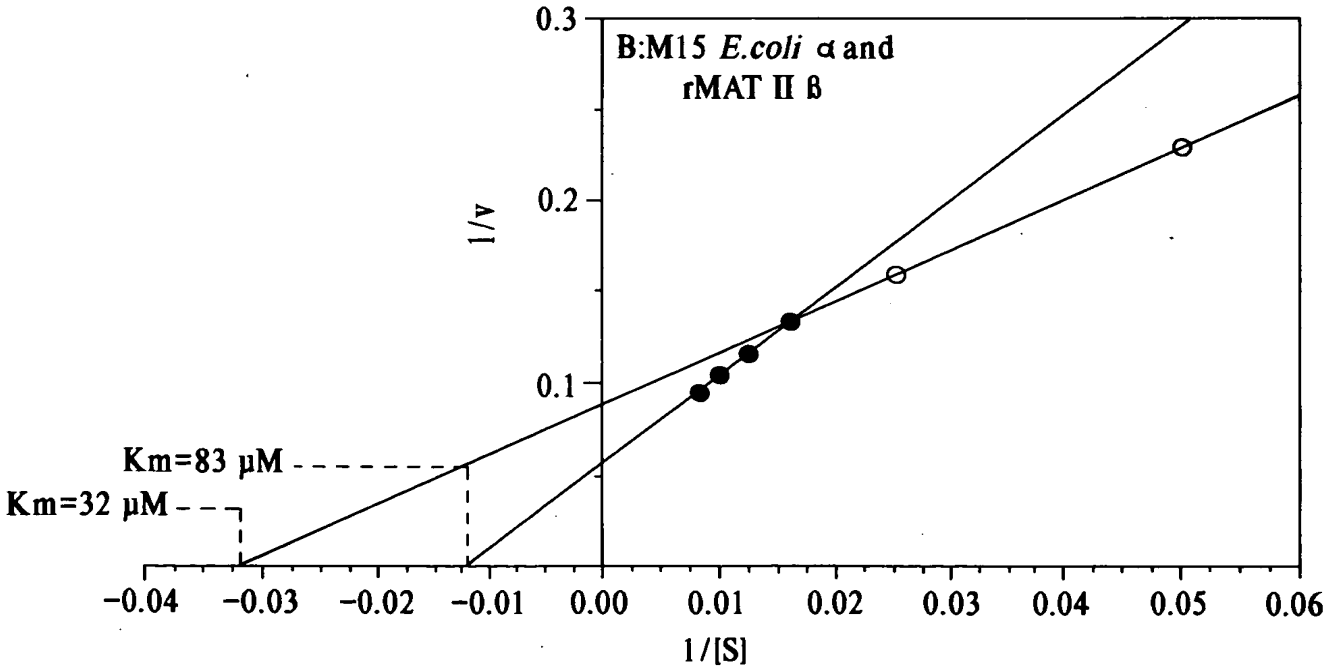


FIG. 12B

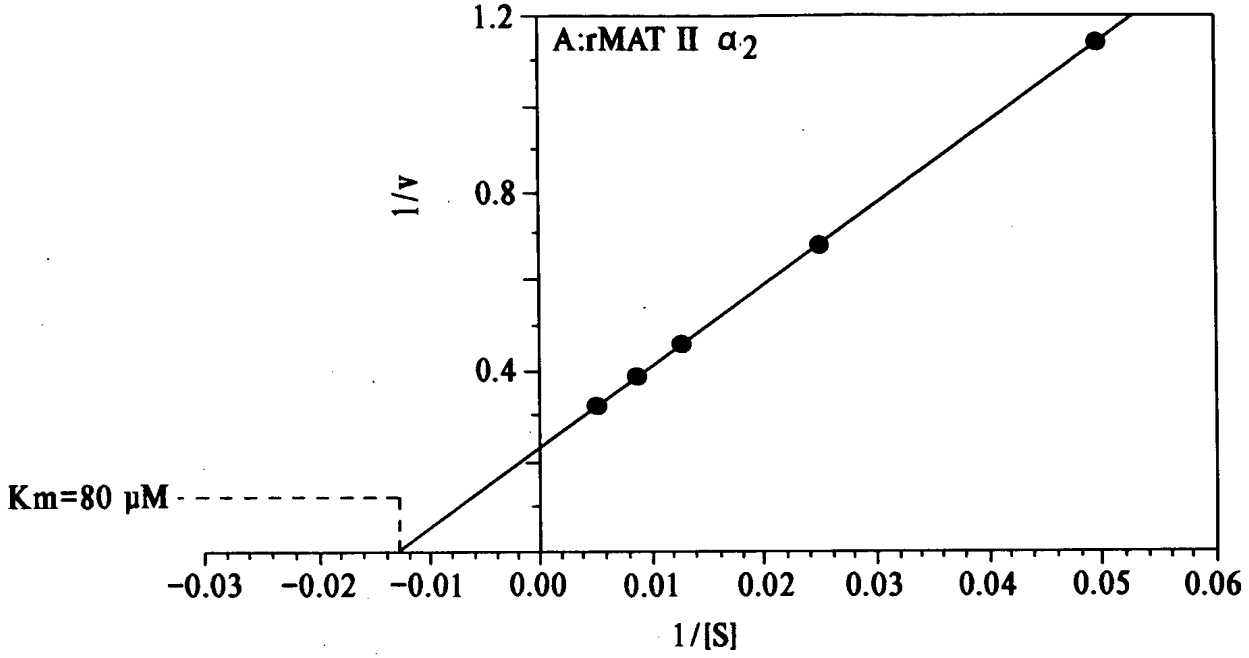


FIG. 12C

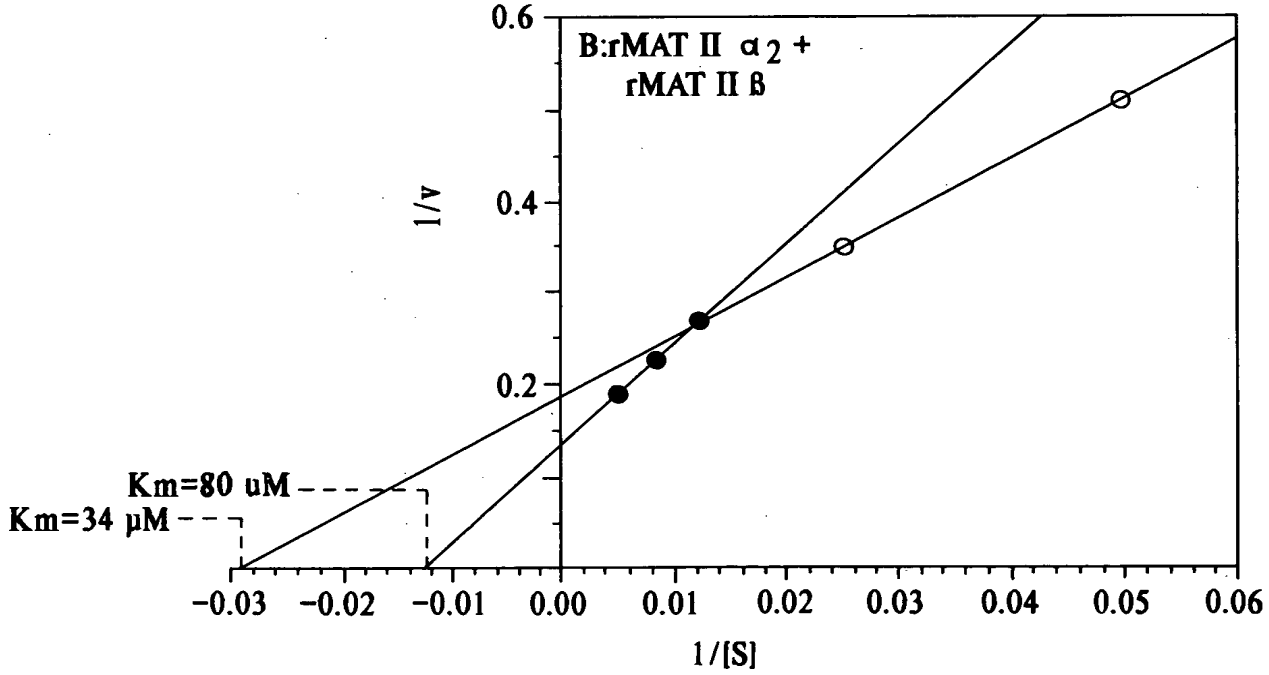


FIG. 12D

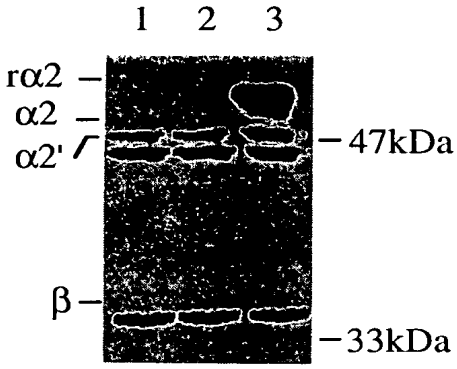


FIG. 13

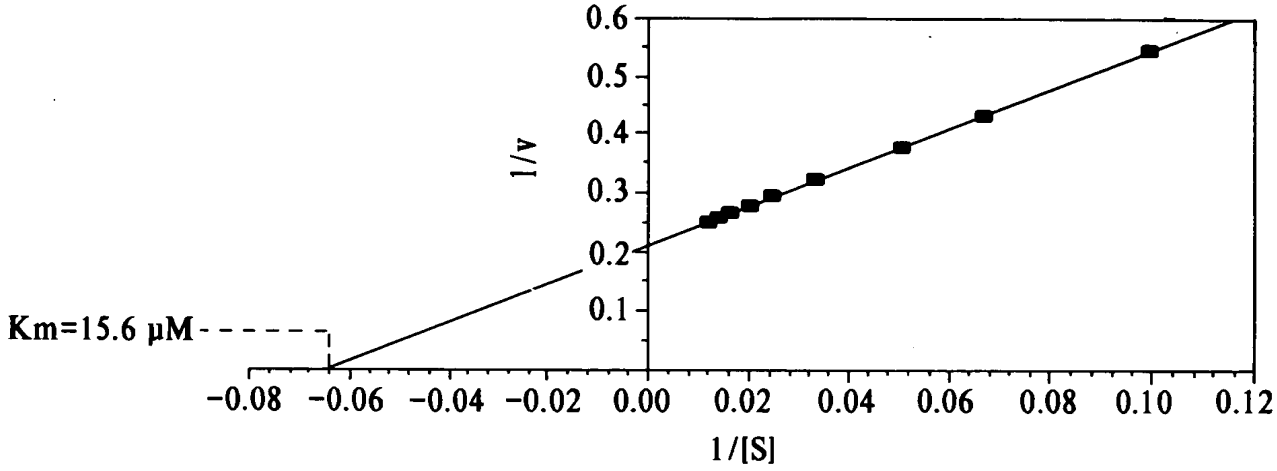


FIG. 14A

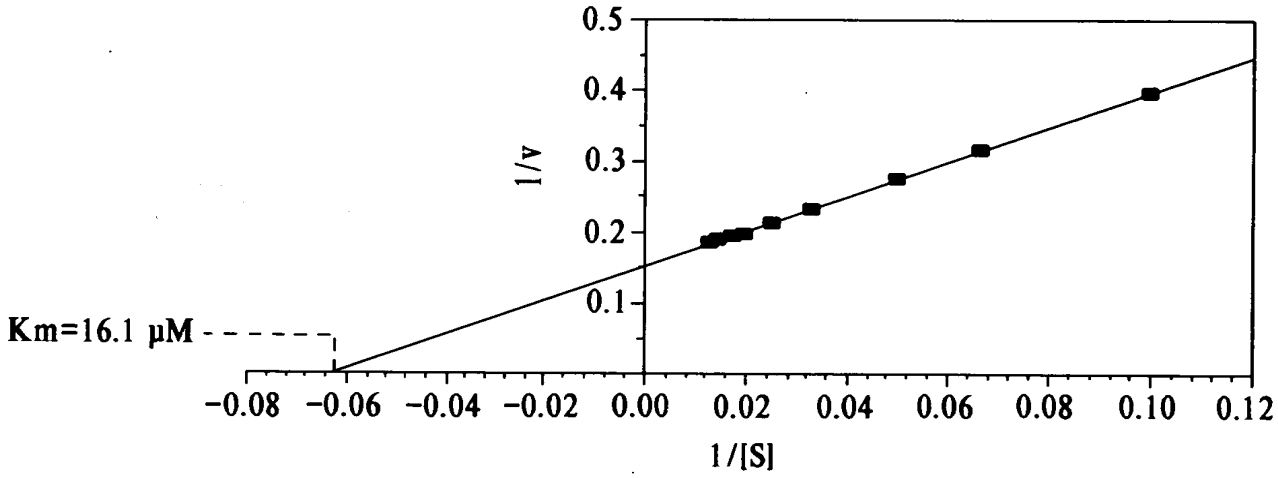


FIG. 14B

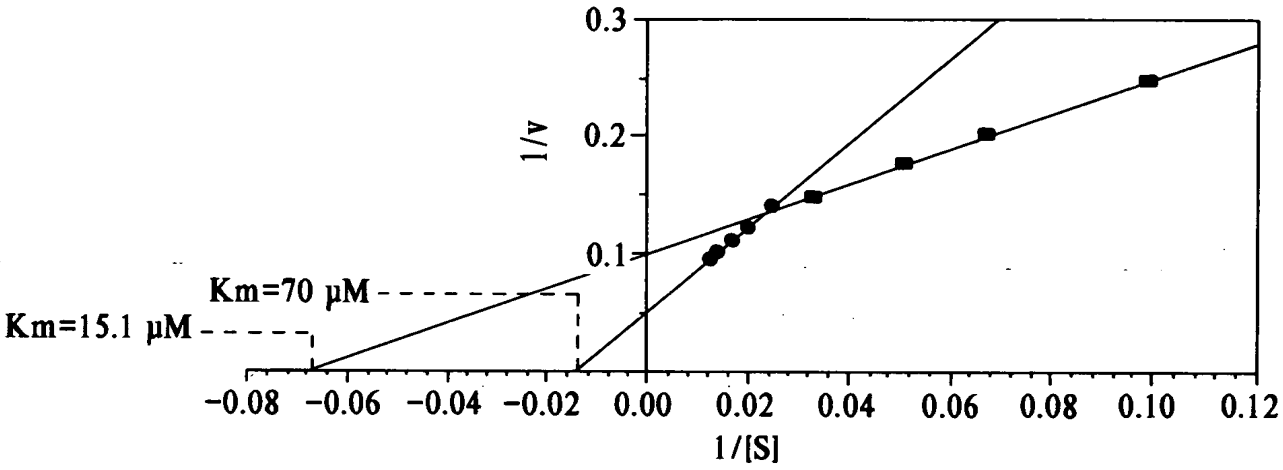

0.3
0.2
0.1
1/v
Km=70 µM
Km=15.1 µM
-0.08
-0.06
-0.04
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
1/[S]

FIG. 14C

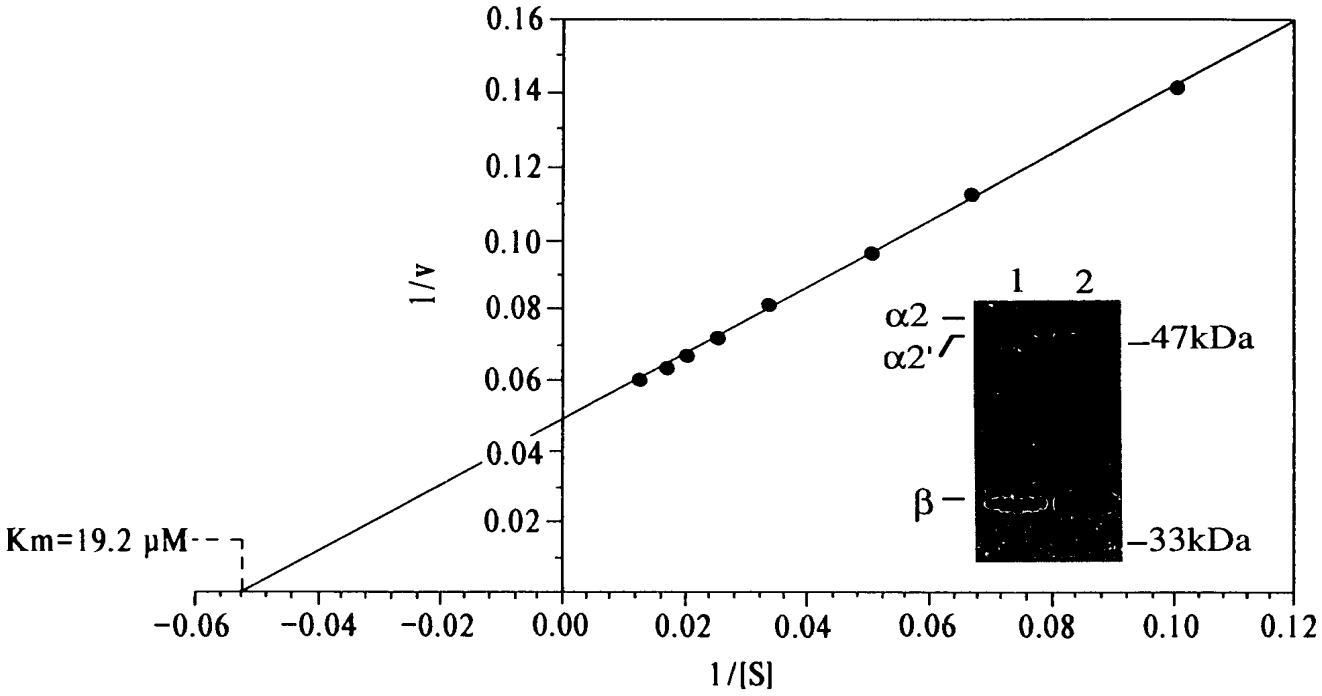

0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
1/v
Km=19.2 μM
-0.06
-0.04
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
1/[S]
1
2
α2
α2'
β
47kDa
33kDa

FIG. 15

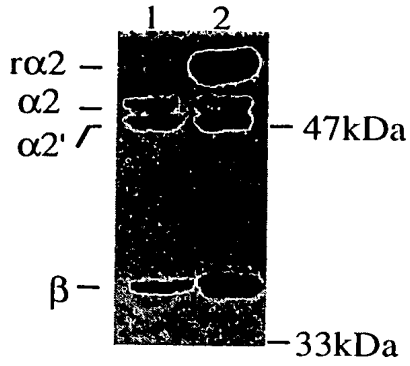


FIG. 16

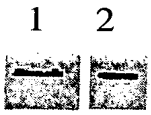


FIG. 17A

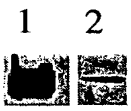


FIG. 17B

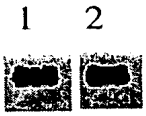


FIG. 17C

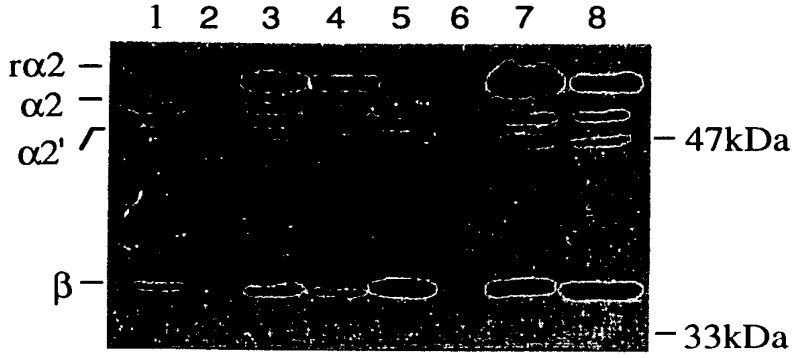


FIG. 18A

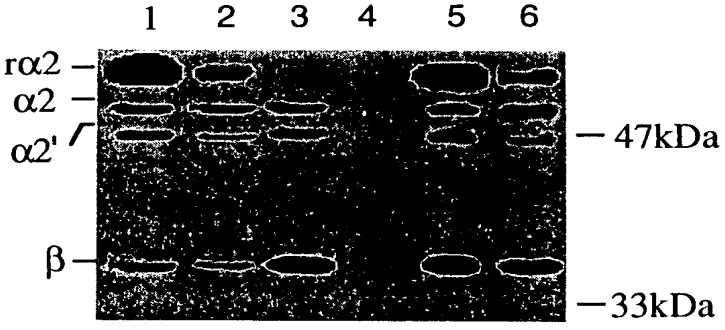


FIG. 18B

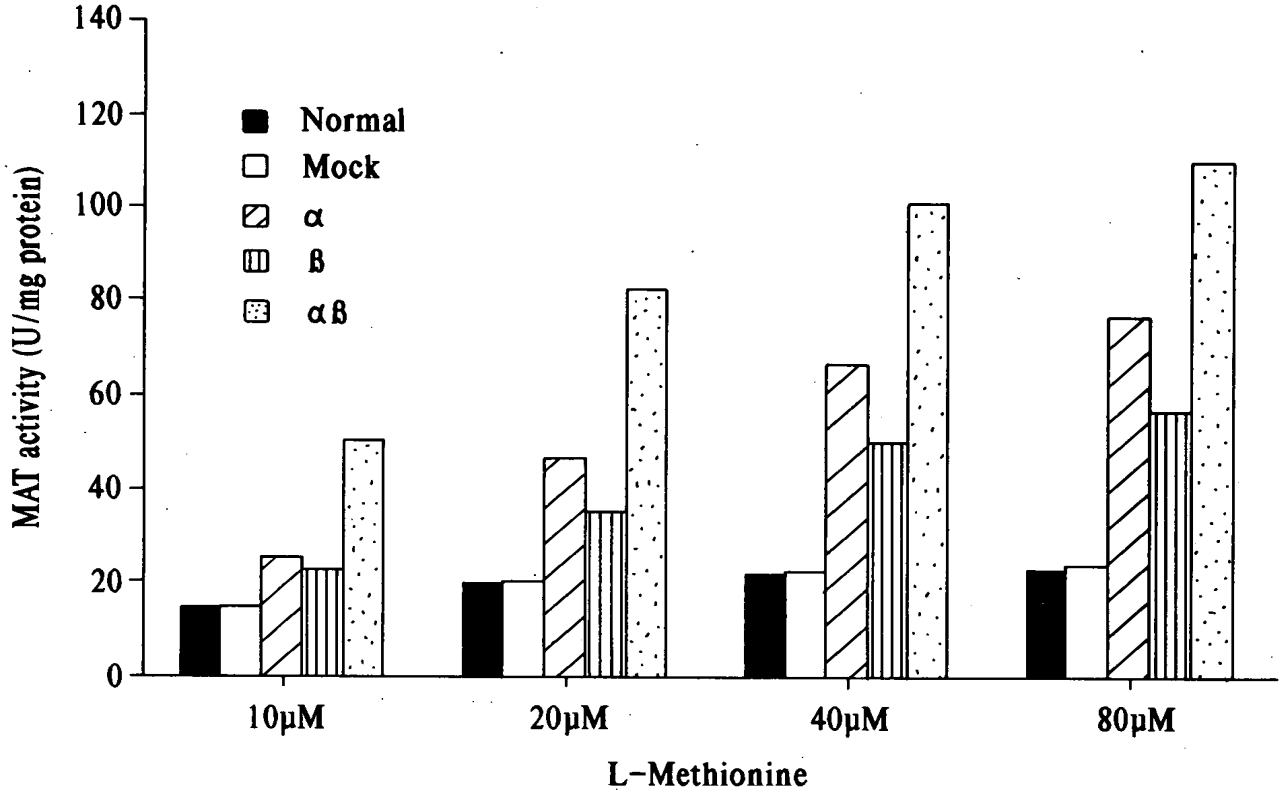

140
120
100
80
60
40
20
0
MAT activity (U/mg protein)
Normal
Mock
α
β
αβ
10μM
20μM
40μM
80μM
L-Methionine

FIG. 19

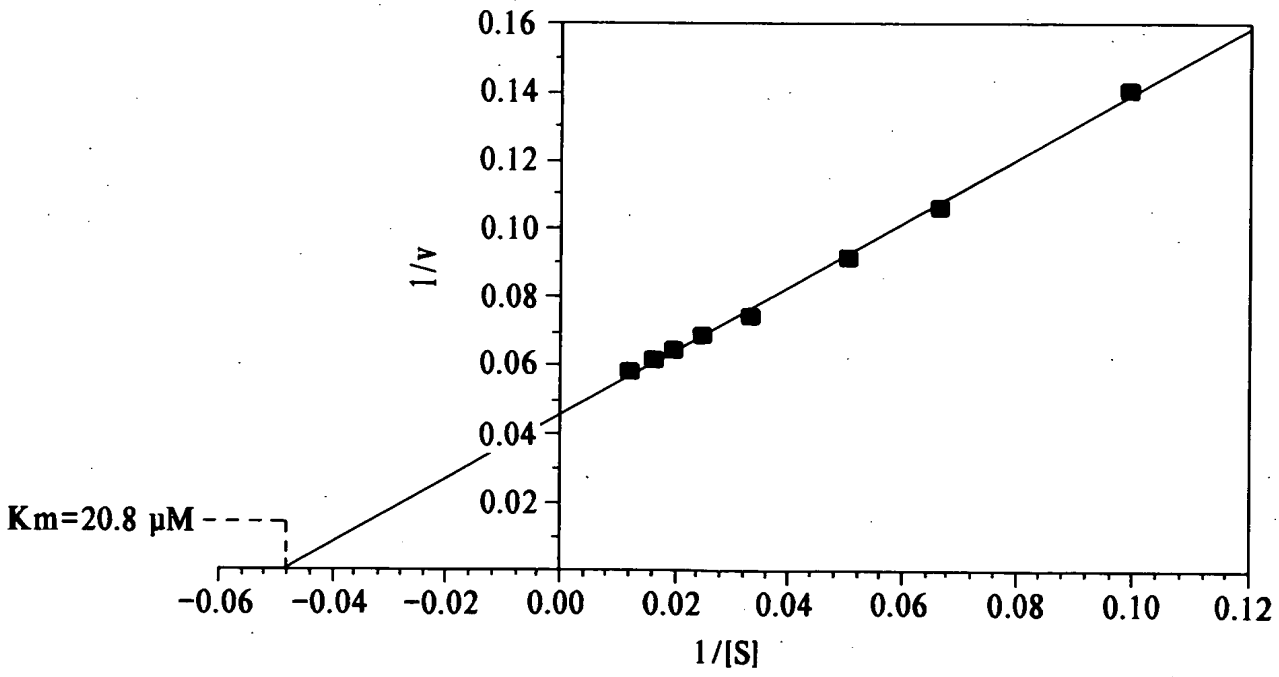

0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
1/v
Km=20.8 μM
-0.06
-0.04
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
1/[S]

FIG. 20

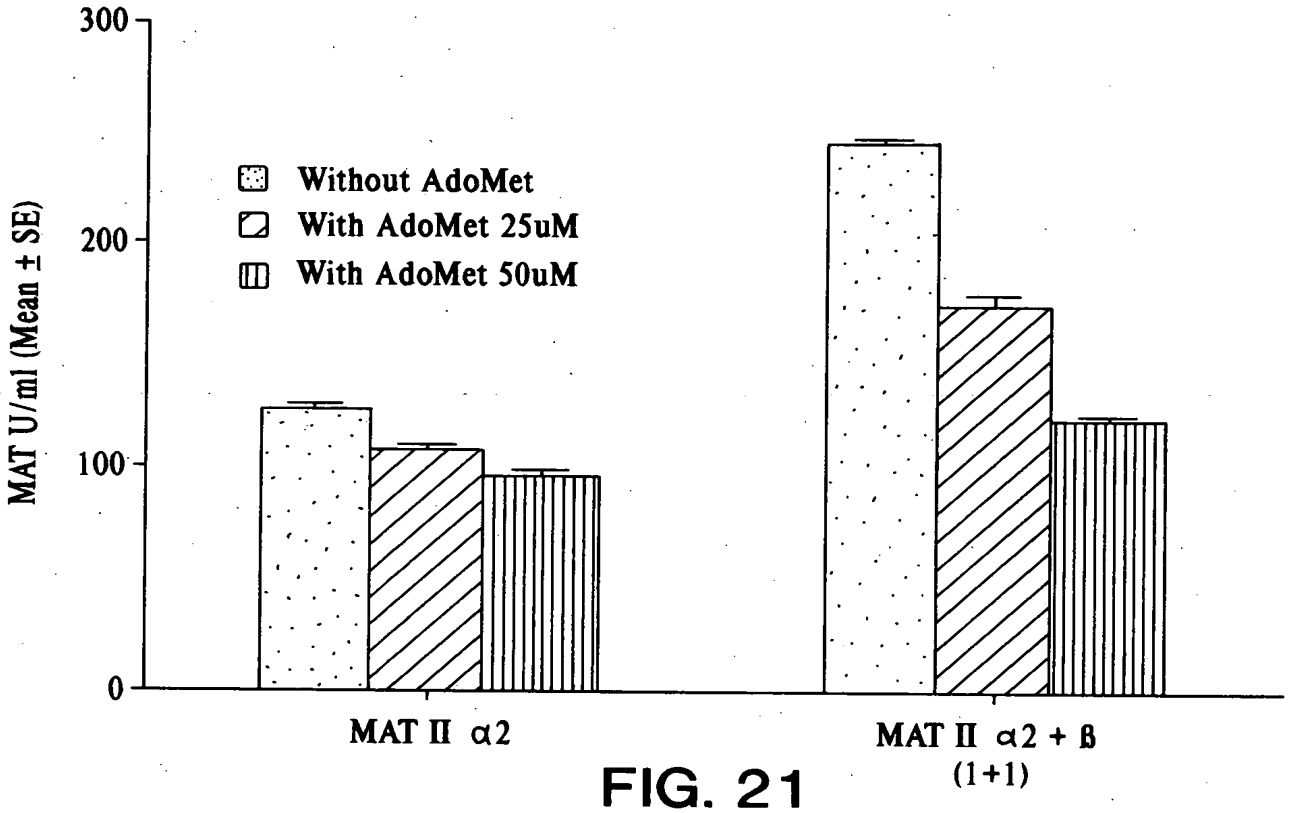

300
200
100
0
MAT U/ml (Mean ± SE)
Without AdoMet
With AdoMet 25uM
With AdoMet 50uM
MAT II α2
MAT II α2 + β
(1+1)

FIG. 21